

WHAT IS CLAIMED IS:

1. A method of processing an inner surface of a bearing having a cylindrical shape, which bearing comprises a resin layer made primarily of synthetic resin on the innermost side thereof, including the steps of:

holding the bearing in a jig;
inserting a mandrel into a bore of the bearing;

heating the mandrel; and
pressing a peripheral surface of the mandrel against the resin layer to finish the inner surface of the bearing without cutting there.

2. A method of processing an inner surface of a bearing according to claim 1, wherein the mandrel is heated within the bore of the bearing so that the peripheral surface of the mandrel is pressed against the resin layer due to thermal expansion of the mandrel.

3. A method of processing an inner surface of a bearing according to claim 1, wherein the peripheral surface of the mandrel is tapered, and the mandrel heated to a predetermined temperature and expanded thereby is inserted into the bore of the bearing so as to press the peripheral surface thereof against the resin layer.

4. A method of processing an inner surface of a bearing according to claim 1, wherein

the peripheral surface of the mandrel is tapered, and the mandrel heated and expanded thereby is inserted into the bore of the bearing so as to press the peripheral surface thereof against the resin layer, and wherein

the mandrel is further heated within the bore of the bearing so that the peripheral surface of the mandrel is pressed against the resin layer due to thermal expansion of the mandrel.

5. A method of processing an inner surface of a bearing according to claim 1, wherein the synthetic resin is polytetrafluoroethylene.

6. A method of processing an inner surface of a bearing according to claim 3, wherein the synthetic resin is polytetrafluoroethylene.

7. A method of processing an inner surface of a bearing according to claim 4, wherein the synthetic resin is polytetrafluoroethylene.

8. A method of processing an inner surface of a bearing according to claim 1, wherein the synthetic resin is thermosetting resin.

9. A method of processing an inner surface of a bearing according to claim 2, wherein the synthetic resin is thermosetting resin.

10. A method of processing an inner surface of a bearing according to claim 1, wherein the resin layer is formed by impregnating and coating a porous sintered layer provided on a backing metal, primarily with the

synthetic resin.

11. A method of processing an inner surface of a bearing according to claim 5, wherein the resin layer is formed by impregnating and coating a porous sintered layer provided on a backing metal, primarily with the synthetic resin.

12. A method of processing an inner surface of a bearing according to claim 6, wherein the resin layer is formed by impregnating and coating a porous sintered layer provided on a backing metal, primarily with the synthetic resin.

13. A method of processing an inner surface of a bearing according to claim 8, wherein the resin layer is formed by impregnating and coating a porous sintered layer provided on a backing metal, primarily with the synthetic resin.

14. A method of processing an inner surface of a bearing according to claim 9, wherein the resin layer is formed by impregnating and coating a porous sintered layer provided on a backing metal, primarily with the synthetic resin.

15. A method of processing an inner surface of a bearing according to claim 1, wherein the roughness of the peripheral surface of the mandrel is Ry 1.0 μm or less.

16. A method of processing an inner surface of a bearing according to claim 2, wherein the roughness of the peripheral surface of the mandrel is Ry 1.0 μm or

less.

17. A method of processing an inner surface of a bearing according to claim 3, wherein the roughness of the peripheral surface of the mandrel is Ry 1.0 μm or less.

18. A method of processing an inner surface of a bearing according to claim 4, wherein the roughness of the peripheral surface of the mandrel is Ry 1.0 μm or less.

19. A method of processing an inner surface of a bearing according to claim 9, wherein the roughness of the peripheral surface of the mandrel is Ry 1.0 μm or less.

20. A method of processing an inner surface of a bearing according to claim 15, wherein the roughness of the peripheral surface of the mandrel is Ry 0.5 μm or less.